MCF-1100

Marmonix Coriolis Mass Flow Meter

Overview:

Marmonix Coriolis Mass Flow Meter MCF-1100 is designed according to micro motion and Coriolis principle. It is a leading precision flow and density measurement solution offering the most accurate and repeatable mass flow measurement for virtually any process fluid, with exceptionally low pressure drop.
The Coriolis flow meter worked on the Coriolis Effect and was named. Coriolis flow meters are considered to be true mass flow meters because they tend to measure mass flow directly, while other flow meter techniques measure volume flow.
Besides, with batch controller, it can directly control the valve in two stages. Therefore, Coriolis mass flowmeters are widely used in chemical, pharmaceutical, energy, rubber, paper, food and other industrial sectors, and are quite suitable for batching, loading and custody transfer

Advantages:

It has high measurement accuracy, standard accuracy 0.2%; And the measurement is not affected by the physical properties of the medium.
Coriolis type flow meter provide a direct mass flow measurement without the addition of external measurement instruments. While the volumetric flow rate of the fluid will vary with changes in density, the mass flow rate of fluid is independent of density changes.
There is no moving parts to wear and need to be replaced. These design features reduce the need for routine maintenance.
The Coriolis mass flow meter is insensitive to viscosity, temperature and pressure.
The Coriolis flow meter can be configured to measure positive or reverse flow.
Flow meters are operated by flow characteristics such as turbulence and flow distribution. Therefore, upstream and downstream direct pipe operating requirements and flow regulation requirements are not required.
The Coriolis flow meter does not have any internal obstacles, which may be damaged or blocked by viscous slurry or other types of particulate matter in the flow.
It can take measurement of high viscosity fluids, such as crude oil, heavy oil, residual oil and other liquids with higher viscosity.

Application

- Petroleum, such as crude oil, coal slurry, lubricant and other fuels.
- High viscosity materials, such as asphalt, heavy oil and grease;
- Suspended and solid particulate matter materials, such as cement slurry and lime slurry;
- Easy-to-solidified materials, such as asphalt
- Accurate measurement of medium- and high-pressure gases, such as CNG oil and gas
- Micro-flow measurements, such as fine chemical and pharmaceutical industries;

SPECIFICATION

Flow accuracy	±0.2% Optional ±0.1%
Diameter	DN3~DN200mm
Flow repeatability	±0.1~0.2%
Density measuring	0.3~3.000g/cm3
Density accuracy	±0.002g/cm3
Temperature measuring range	-200~300℃ (Standard Model -50~200℃)
Temperature accuracy	+/-1℃
Output of current loop	4~20mA; Optional signal of flow rate/Density/Temperature
Output of frequency/pulse	0~10000HZ; Flow signal (Open collector)
Communication	RS485, MODBUS protocol
Power supply of transmitter	18~36VDC power≤7W or 85~265VDC power 10W
Protection class	IP67
Material	Measuring tube SS316L housing:SS304
Pressure rating	4.0Mpa (Standard pressure)
Explosion-proof	Exd (ia) IIC T6Gb
Enviroment Specifications	
Ambient temperature	-20~-60℃
Enviroment humidity	≤90%RH

Dimension

Model	A	B	C	D	E	NW (only sensor)
	mm	mm	mm	mm	mm	kg
HTCMF-020	250	448	500	89	233	17
HTCMF-025	550	500	445	108	238	17.5
HTCMF-032	550	500	445	108	240	24
HTCMF-040	600	760	500	140	245	32
HTCMF-050	600	760	500	140	253	36
HTCMF-080	850	1050	780	220	315	87.5
HTCMF-100	1050	1085	840	295	358	165
HTCMF-150	1200	1200	950	320	340	252
HTCMF-200	1200	1193	1000	400	358	350

Model	A	B	C	D	E	Nw
	mm	mm	mm	mm	mm	kg
HTCMF-003	178	176	250	54	244	48
HTCMF-006	232	263	360	70.5	287	8.1
HTCMF-00B	232	275	395	70.5	290	82
HTCMF-010	95	283	370	70.5	242	65
HTCMF-015	95	302	405	70.5	242	65

Flow Range

Specification	DN (mm)	Flow range (kg/h)	Zero stability, kg/h			NW (kg)	GW (kg)
			0.2%	0.15%	0.1%		
QTCMF-003	3	0~96~120	0.018	0.012	0.012	8	19
QTCMF-006	6	0~540~660	0.099	0.066	0.066	12	22
QTCMF-008	8	0~960~1200	0.18	0.12	0.12	12	23
QTCMF-010	10	0~1500~1800	0.27	0.18	0.18	11	24
QTCMF-015	15	0~3000~4200	0.63	0.42	0.42	12	25
QTCMF-020	20	0~6000~7800	1.17	0.78	0.78	20	34
QTCMF-025	25	0~10200~13500	2.025	1.35	1.35	21	35
QTCMF-032	32	0~18000~24000	3.6	2.4	2.4	27	45
QTCMF-040	40	0~30000~36000	5.4	3.6	3.6	35	55
QTCMF-050	50	0~48000~60000	9	6	6	40	60
QTCMF-080	80	0~120000~160000	24	16	16	90	150
QTCMF-100	100	0~222000~270000	40.5	27	27	170	245
QTCMF-150	150	0~480000~600000	90	60	60	255	350

Mode Selection

QTCMF	XXX	X	X	X	X	X	X	X	X	X
Caliber (mm)	DN3mm-DN200 mm									
Nominal Pressure	0.6Mpa		1							
	1.0Mpa		2							
	1.6Mpa		3							
	2.5Mpa		4							
	4.0Mpa		5							
	Others		6							
Connection	Flange			1						
	Tri-clamp(Sanitary)			2						
	Thread			3						
	Others			4						
Accuracy	0.1				1					
	0.2				2					
Temperature	- 200℃～200℃					1				
	-50℃～200℃					2				
	-50℃～300℃					3				
Structure Type	Compact/Integral						1			
	Remote						2			
Power Supply	AC220V							A		
	DC24V							D		
Output Signal	4-20mA/Pulse,RS485								A	
	4-20mA,HART								B	
	Others								C	
Ex-proof	Without Ex-proof									0
	With Ex-proof									1
Process Connection	DIN PN10									1
	DIN PN16									2
	DIN PN25									3
	DIN PN40									4
	ANSI 150#									A
	ANSI 300#									B
	ANSI 600#									C
	JIS 10K									D
	JIS 20K									E
	JIS 40K									F
	Others									G

Installation

Basic Requirements on installation

1. Flow direction should be in accordance with PHCMF sensor flow arrow.
2. Properly supporting is required for preventing tubes vibrating.
3. If a strong pipeline vibration is inevitable, it is recommended to use a flexible tube to isolate the sensor from the pipe.
4. Flanges should be kept parallel and their center points should be located on the same axis to avoid subsidiary force generation.
5. Installation vertically, make the flow from the bottom up when measuring, meanwhile, the meter should not be installed on the top to prevent air getting trapped inside the tubes.

Installation Direction

In order to ensure the reliability of the measurement, the ways of installation should consider the following factors:

1. The meter should be installed downward when measuring liquid flow (Figure 1), so that air cannot get trapped inside the tubes.
2. The meter should be installed upward when measuring gas flow (Figure 2), so that liquid cannot get trapped inside the tubes.
3. The meter should be installed sideward when the medium is turbid liquid (Figure 3) to avoid particulate matter accumulated in the measuring tube. The flow direction of medium goes from the bottom up through the sensor.